CLAIM LISTING

Claim 1 (original):

A hydraulic fluid displacement pump comprising:

a pump body having an exterior surface and defining an axial bore comprising a first chamber and a second chamber which are separated by a diametrically reduced section of said axial bore, said pump body further defining at least one gas vent extending from said exterior surface into said first chamber, a fluid inlet port extending from said exterior into said second chamber, and a fluid discharge port extending from said exterior thereof into said second chamber;

a hydraulic head attached to said pump body;

a displacement plunger, said displacement plunger extending from said hydraulic head through said axial bore and which is operated by said hydraulic head to be reciprocated within said axial bore, said displacement plunger defining a vent passage through a distal end thereof;

a hydraulic circuit comprising a prime mover, a hydraulic valve assembly, and a pair of hydraulic cylinders which are fitted with floating pistons, wherein said hydraulic circuit is connected to said hydraulic head;

a fluid discharge conduit connected to said fluid discharge port;

a first check valve inline with said fluid discharge conduit;

a second check valve connected to said fluid inlet port; and

a lift tube, wherein said lift tube is in fluid communication with said discharge conduit.

Claim 2 (original):

The hydraulic fluid displacement pump of claim 1, wherein said hydraulic circuit utilizes two separate working fluids.

Claim 3 (original):

The hydraulic fluid displacement pump of claim 2, wherein one working fluid is of a lower specific gravity than the other working fluid.

Claim 4 (original):

The hydraulic fluid displacement pump of claim 3, wherein one of the two working fluids is diesel fuel.

Claim 5 (original):

The hydraulic fluid displacement pump of claim 1, wherein said first chamber and said second chamber are of diameters which are greater then the diameter of said displacement plunger.

Claim 6 (original):

The hydraulic fluid displacement pump of claim 1, further comprising:

a casing having an interior volume, said casing enclosing said pump body and said hydraulic head within said interior volume, said casing defining a first fluid passage in fluid communication with said interior volume at a first end thereof and a second fluid passage in fluid communication with said interior volume at a second end thereof; and

wherein said lift tube is attached to said casing and is sealed from said interior volume thereof.

Claim 7 (original):

The hydraulic fluid displacement pump of claim 1, further comprising a control system operatively connected to said hydraulic circuit to control the reciprocation of said displacement plunger.

Claim 8 (original):

The hydraulic fluid displacement pump of claim 1, wherein said first chamber and said second chamber are fluidically sealed from one another by said displacement plunger extending through said diametrically reduced section.

Claim 9 (withdrawn-currently amended):

A hydraulic fluid displacement pump comprising:

a pump body having an exterior surface, said pump body defining an axial bore, a fluid inlet port extending from said exterior into said axial bore, a fluid discharge port extending from said exterior surface into said axial bore, and a vent port extending from said exterior surface into said axial bore;

a hydraulic head attached to said pump body and positioned within said casing;

a displacement plunger which extends from said hydraulic head through said axial bore and which is operated by said hydraulic head to be reciprocated within said axial bore;

a hydraulic circuit comprising a prime mover, a hydraulic valve assembly, and a pair of hydraulic cylinders which are fitted with floating pistons, wherein said hydraulic circuit is attached to said hydraulic head;

a fluid discharge conduit connected to said fluid discharge port;

a first check valve inline with said fluid discharge conduit;

a second check valve connected to said fluid inlet port;

a lift tube, wherein said lift tube is in fluid communication with said discharge conduit; and

a vent valve attached to said vent port.

Claim 10 (withdrawn):
The hydraulic fluid displacement pump of claim 9, wherein said hydraulic circuit utilizes two separate working fluids.

Claim 11 (withdrawn):
The hydraulic fluid displacement pump of claim 10, wherein one working fluid is of a lower specific gravity than the other working fluid.

Claim 12 (withdrawn):
The hydraulic fluid displacement pump of claim 11, wherein one of the two working fluids is diesel fuel.

Claim 13 (withdrawn):
The hydraulic fluid displacement pump of claim 9, further comprising a control system operatively connected to said hydraulic circuit to control the reciprocation of said displacement plunger.

Claim 14 (withdrawn):
The hydraulic fluid displacement pump of claim 9, wherein said vent valve is a normally closed valve and is operated to open based upon a predetermined fluid pressure within said hydraulic circuit.

Claim 15 (withdrawn):

The hydraulic fluid displacement pump of claim 9, further comprising:

a casing having an interior volume and enclosing said pump body and said hydraulic head within said interior volume, said casing defining a first fluid passage in fluid communication with said interior volume at a first end thereof and a second fluid passage in fluid communication with said interior volume at a second end thereof; and

wherein said lift tube is attached to said casing and is sealed from said interior volume thereof.